US Army Corps of Engineers®

The Corps Environment

July 2008 Vol. 9, No. 3

Soil sampling

Contractors sample the soil at the Joliet Army Ammunition Plant in Illinois during the recently completed environmental remediation. See story on pages 8-9. *(Photo by Joliet Ammunition Plant Project Delivery Team)*

Value engineering pays off for environmental projects

By Greg Mellema, PE
U.S. Army Engineering and Support Center, Huntsville (EM CX)

In 2007, the U.S. Army Corps of Engineers began a collaborative effort to conduct value engineering (VE) studies for the U.S. Environmental Protection Agency's Superfund Program.

The Huntsville Engineering and Support Center, Directorate of Environmental and Munitions Center of Expertise (EM CX), located in Omaha, Neb., has completed nine VE

See Value engineering page 7

Corps transforming environmental programs

By Candice Walters
Headquarters, USACE

Army Transformation is continuing within the U.S. Army Corps of Engineers. First the Corps transformed its military construction program. Now the Corps is looking at its environmental programs.

USACE is transforming its reimbursable programs to ensure "we are providing our customers with the consistent, efficient and effective products and services they expect, and deserve," said Maj. Gen. Merdith W.B. (Bo) Temple, deputy commanding general for military and international operations.

"Our goal is to align ourselves to execute our environmental mission by taking advantage of the assets, work force capabilities and resources found within our Environmental Community of Practice to focus on national program initiatives while strengthening the Corps' environmental programs," Temple said, adding that the transformation message has been coordinated with the Corps' environmental customers, including the Army Secretariat, to ensure expectations are being met.

The USACE Environmental Transformation efforts began with a January "Environmental Summit" that brought together people from throughout the Corps to set the direction for ensuring that the Corps' reimbursable environmental programs exceed their customers' expectations.

During the summit participants merged 12 different subject areas into four overarching topics: People, Program Management and Opportunities, Relationships, and Thinking Corporately. These were further refined into four themes: Transforming Customer Care; Transforming Management of Programs; Transforming Environmental Capabilities; and

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Inside this issue:

Corps completes cleanup at Federal Creosote Superfund Site in New Jersey

By Gene Urbanik
New York District

Following seven years of cleanup activities at the Federal Creosote Superfund Site in Manville, N.J., more than 450,000 tons of contaminated soil were removed.

As a result, nearly 100 residential and commercial properties have been successfully restored and any risks stemming from creosote in the soil have been eliminated.

The end of the $250 million project was marked by a March 7 completion ceremony and press event attended by Rep. Michael Ferguson, N.J., 7th District; Brig. Gen. Todd T. Semonite, the Corps' North Atlantic Division commander; Col. Nello Tortora, the Corps' New York District commander; Alan J. Steinberg, regional administrator, U.S. Environmental Protection Agency; and Lillian Zuza, mayor of the Borough of Manville, N.J.

"Today, we are specifically focused on a great environmental success story," Tortora said.

"Back in the summer of 2000, we entered into an Inter-Agency Agreement with EPA Region II in which they requested from the Corps, engineering and construction management support in the remediation and restoration effort of this Federal Creosote Superfund Site. This partnership between EPA Region II and the Army Corps provided us with the opportunity to utilize over two decades of hazardous, toxic and radiological waste experience in support of and hand-in-hand with the EPA on Superfund projects throughout the state of New Jersey."

Contaminated soil being removed from the Rustic Mall under a remedial action contract at the Federal Creosote Superfund site in New Jersey. *(Photo by Eugene Urbanik)*

The 50-acre site is located in a highly developed area in Somerset County. It was listed on the National Priorities List in January 1999, as one of the nation's most hazardous waste sites.

The Federal Creosoting Company began using the property in 1919 to treat railroad ties and wooden poles with creosote, a wood preservative.

During its operation, the site had several buildings used in the creosoting process and multiple above-ground tanks that contained the creosote. Creosote was discharged through two canals into two unlined creosote waste lagoons. In the center of the site, lumber treated with creosote would be left to drip onto surface soil.

When operations ceased in 1956, the property was purchased by developers. In the early 1960s, 137 single family homes were built on 35 acres of the Claremont Development of the 50-acre site. The remaining 15 acres were developed into the Rustic Mall. The redeveloped property was built on top of the contaminated soil and the

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The Corps Environment

is printed quarterly by the U.S. Army Corps of Engineers as an unofficial newsletter published under the provisions of AR 360-1. The purpose of this newsletter is to provide information about Corps environmental actions, issues, policies and technologies. Opinions expressed are not necessarily those of the U.S. Army. Inquiries can be addressed to U.S. Army Corps of Engineers, Attn: CEHNC-PA, P.O. Box 1600, Huntsville, AL 35807-4301. Phone: 256-895-1694 or fax 256-895-1689.

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The Corps Environment welcomes submissions. Please send your articles, photos, events, letters or questions via e-mail to: debra.valine@usace.army.mil.

Deadline for submissions:
Feb. 15 (April issue)
May 15 (July issue)
Aug. 15 (October issue)
Nov. 15 (January issue)
All submissions are subject to editing.

The Corps Environment is available on the World Wide Web at: https://ekopowered.usace.army.mil/ecop/corps_environment/.

Printed on recycled paper
50 percent post-consumer

Manville

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waste lagoons and on at least one occasion, creosote sludge seeped into a residential basement sump and was pumped out into a storm sewer.

"We had a major challenge at this site because the residential area was built on contaminated soil that, in some spots, actually oozed creosote sludge," Steinberg said.

"With the cooperation of the Borough of Manville, we were able to figure out the best way to tackle the contamination and are extremely proud that we have met our cleanup objectives in record-breaking time," he said.

"Our mission from the EPA was quite clear: deliver a quality product in a safe and timely manner and as economically effective as possible," Tortora said.

The cleanup was approached in three different stages.

In the first phase, beginning in the spring of 2001, the buried lagoons and canals that still contained creosote and byproducts were addressed. Eighteen residential properties were acquired and demolished in order to better reach the source material, which was then excavated, treated and disposed of off-site.

In the second phase, contaminated soil was excavated from all residential properties in the Claremont Development containing high amounts of creosote. Lastly, the Rustic Mall was demolished by the mall owners and contaminated soil was removed by the remedial action contractor.

The team included members from five respective Army Corps districts and two regional business centers including the New York District, which was responsible for leading the remedial action phase and overall contract management, quality assurance and safety enforcement.

"Our mission from the EPA was quite clear: deliver a quality product in a safe and timely manner and as economically effective as possible."
— Col. Nello Tortora

Kansas City District oversaw the remedial design and technical assistance; Philadelphia District also provided quality assurance; Omaha District contributed to contract cost control; and Baltimore District was responsible for key real estate services.

The Corps employed highly skilled contractors including the Architect/Engineer firm of CDM and Corps' remedial action contractor, Sevenson Environmental Services and their subcontractors, Carner Brothers; Linde-Griffith; Kennon Surveying; and members of the Operating Engineers Local 825 Union; the Heavy Construction Laborers Local 472 Union; and the Teamsters Local 560 Union.

Tortora attributed project success to the execution of a detailed quality assurance and quality control program along with a comprehensive cost tracking system.

In addition, detailed health and safety, accident prevention, air-monitoring, odor control and transportation programs were instituted to ensure worker and community safety that minimized inconveniences to nearby residents.

Of significance was that nearly 600,000 accident free man-hours were performed on the project.

More stories available online

Internet exclusive stories for this issue are: Ashtabula River on road to recovery and Native American environmental and cultural resource training.

These articles are located at https://ekopowered.usace.army.mil/ecop/corps_environment/.

Students soak up Army Corps workshops (with SpongeBob's help)

By JoAnne Castagna, Ed.D.
New York District

A young female student from New York Public School 43, stands on the Rockaway Beach boardwalk and gently pokes a lifeless yellow mound lying on the bottom of a water tank, "What's this?" she asks.

"It's a yellow sea sponge — like the cartoon character, SpongeBob SquarePants, but unlike Bob, this sponge doesn't have eyes, legs, arms or a brain," explains Lisa Baron, a project manager with the Corps' Harbor Programs Branch.

The girl was stunned as were her classmates surrounding her. It seems the students didn't make a connection between the popular cartoon character and the marine life that live in the waters right behind their school that sits on Rockaway Beach, a peninsula on the south shore of Queens, New York.

This was the aim of the Rockaway Waterfront Alliance that asked the U.S. Army Corps of Engineers to visit the students.

"The Corps' projects have protected the Rockaway shoreline and waterways for some time, but the local community and youth have never had the opportunity to find out how necessary this work is to keeping their waterways open," said Jeanne DuPont, director, Rockaway Waterfront Alliance.

A team of Corps biologists and engineers held several workshops for students at Rockaway Beach along the boardwalk right behind their school.

Dredging Workshop

Douglas Leite, project manager, New York District, Corps of Engineers, informed the students about the dredging work the Corps is performing off their shore and how it's beneficial to their community.

Students learn about the marine life living in their Rockaway Beach waters from Lisa Baron, project manager, Harbors Programs Branch, New York District, U.S. Army Corps of Engineers. *(Photo by Dan Desmet)*

"We dredge sand from the East Rockaway Inlet and place it onto the beach to increase the size and reduce flood risk and coastal erosion, as well as provide a recreation area for the community," Leite said.

Sea Life Workshop

Baron told students that during dredging operations the Corps does all it can to protect marine life in their natural habitat. The Corps uses deflectors to prevent sea turtles from getting caught in a dredge. Dredging work is done when species are not present.

Baron showed live species of Rockaway marine life for the students to hold and touch that included slime covered moon snails, hermit and mole crabs, sea horses, mud snails, sea anemones, sea stars — and a yellow sea sponge.

Baron said the students asked many questions and appeared very fascinated with the marine life.

"They were intrigued to learn that male sea horses play Mr. Mom and give birth to their babies, and that sea stars regenerate their arms and pull their stomachs outside of their body to feed," she said.

Piping Plover Workshop

Robert Smith, project biologist with the Corps' New York District, talked to students along the beach about threatened and endangered species and how the Corps is taking measures to protect them.

One of these is the Piping Plover, a shorebird threatened due to beach erosion. Smith created a mock Piping Plover egg hunt for the students to show them what Piping Plover eggs and nests look like. During their hunt he told the students that by building up the beaches with sand, the Corps is creating a habitat for the birds to nest and care for their young. He also said the Corps schedules the sand placement outside the nesting season.

The Corps' workshops created such a buzz among the students that their school's principal asked the Corps team to visit a class of second grade students.

"The Corps' visit was extremely informative for the students. The workshops also support the efforts that the Rockaway Waterfront Alliance has been addressing by encouraging public access to the waterfront through education with local youth," Dupont said.

"To know that the Corps' outreach may inspire the students to become future scientists or merely improve their environmental awareness is rewarding," Baron said.

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Transforming HQUSACE Management.

"We knew that we must transform if we are to keep our reputation as the 'Environmental Corps,'" said Stacey Hirata, acting director of the Corps' Environmental Community of Practice. "There are others competing for the reimbursable work we do. Thus, we have to do what's necessary to ensure that we are the 'service provider of choice,' and that means doing it better, faster, less expensive, greener and safer."

Temple endorsed nine recommendations. The nine include:

• Standardize customer communications;

• Utilize a corporate environmental communications and outreach plan;

• Align portfolio management to USACE vision;

• Increase regional use of virtual teams/move to optimization as acceptable to the customer, between one to two years;

• Develop a five-year corporate environmental resource plan;

• Improve technology information dissemination and infusion;

• Improve technology access and management process;

• Revitalize the eCoP Steering Committee; and

• Align National/Regional Environmental Listening and Exchange Workshops.

"Because the Corps' environmental programs are diverse, we feel that to be more consistent, effective and efficient, we need to look at managing these programs regionally."

— Stacey Hirata

"Because the Corps' environmental programs are diverse, we feel that to be more consistent, effective and efficient, we need to look at managing these programs regionally," Hirata said. "This approach will leverage our districts' talents better and enhance the environmental services our nation expects during disasters and in support of warfighters."

Environmental Transformation is not new. In fact, it has been going on since 2004 with the completion of a functional area analysis on the environment that produced several recommendations. One of the recommendations resulted in the creation of a Contract Acquisition Working Group to review environmental contract requirements and facilitate collaboration between districts/regions to reduce contracting costs and ensure contract availability and capability worldwide.

Also in 2006, the Corps transformed the Formerly Used Defense Sites program to regionalize the program management and execution, reduce the number of districts involved in the program, and secure efficiencies and increased effectiveness. That same year, a Military Munitions Support Services strategy was established to take a comprehensive look at the various munitions services the Corps was providing and establish governance that is enhancing efficiencies and effectiveness.

In 2007, the Hazardous, Toxic and Radioactive Waste and Military Munitions Centers of Expertise merged into the Environmental and Munitions Center of Expertise under the operational control of the U.S. Army Engineering and Support Center, Huntsville, creating a synergy between Huntsville and Omaha District, which better serves military and civil customers on environmental and munitions remediation and responses.

The Environmental Quality (EQ) program, with its compliance, conservation and pollution prevention services, is the next function to transform. It's moving from a compliance-based approach to a more performance-based, sustainability paradigm. The program includes new supporting business practices, such as strategic sourcing, to leverage the buying power of the Army to maximize available funding. The EQ transformation concept represents the maturation of the environmental management of the Army's air, water and land assets. It's moving away from the traditional environmental mission area of compliance into the holistic, integrated planning approach embodied in the *Army Strategy for the Environment* with its focus on sustainability.

The Corps' efforts are designed to support the Army Environmental Command's (AEC) efforts in this regard and to ensure that capabilities found within the Corps can supplement those found throughout the Army.

To that end, the Corps and AEC synchronized efforts and updated a partnering agreement that better reflects an enhanced working relationship and allowed them to transform programs together. The updated agreement, signed April 18, calls for conducting formal semi-annual meetings and establishing an executive liaison to maintain overall communications and coordination. This will enhance the Corps' support to installation cleanup and restoration, base closure, unexploded ordnance and range sustainment, research and development, pollution prevention, conservation and compliance activities.

Plans call for transforming the EQ program by October with initial operating capability in early fiscal year 2009, and then continuing to transform other reimbursable environmental services that the Corps provides such as the Defense Environmental Restoration Program and Superfund.

2008 Corps workshop enhances 'A Green Future in the Pacific'

By Honolulu District Public Affairs

More than 150 local architects, engineers, construction contractors and others in related fields attended the 13th Annual U.S. Army Corps of Engineers Workshop April 23 at the Ala Moana Hotel in Honolulu.

The workshop provided local design and construction representatives the latest information on the Honolulu District's project workload, technical information and administrative procedures that affect how to do business with the Corps.

This year's workshop theme was, "A Green Future in the Pacific."

Sid Char, president of the American Institute of Architects' Honolulu Chapter, co-organizer of the workshop with the Corps, gave the opening remarks and introduced Tony Paresa, the district's deputy district engineer for Programs and Project Management.

"The workshop's goal is to emphasize how important it is for the Corps and all our partners to work together to successfully execute our projects while protecting the environment," Paresa said.

Information presented during the 2008 workshop will allow participants to better understand contracting methods and procedures, to be aware of new standards and codes affecting military projects and to learn about design, construction and legal implications of working with the Honolulu District.

Dr. Robert H. Richmond of the University of Hawaii (UH) and Gerald Davis of the National Oceanic and Atmospheric Administration (NOAA) spoke at the luncheon. They talked about the important partnership of the Corps, local industry and local stakeholders in protecting Hawaii's fragile reefs.

In their presentation, Richmond and Davis discussed protecting the environment, and protecting local reefs, by controlling how much sediment and fresh water enter the sea. They also discussed how the Corps' Civil Works and Regulatory divisions are partnering with NOAA, UH and Malama Maunalua to help study the effects of sediment runoff in Maunalua Bay and exploring ways to mitigate it.

Honolulu District Chief, Regulatory Branch George Young leads a breakout session on the "Corps Permits for Projects on Water" at the 13th Annual U.S. Army Corps of Engineers Workshop conducted April 23 at the Ala Moana Hotel in Honolulu. *(Photo by Joseph Bonfiglio)*

The workshop and breakout sessions also provided an opportunity for industry co-sponsors from the American Institute of Architects (Honolulu Chapter), American Council of Engineering Companies of Hawaii, General Contractors Association of Hawaii, Building Industry Association of Hawaii and the Associated Builders & Contractors of Hawaii to discuss issues one-on-one with Corps employees in the spirit of partnership.

Breakout sessions included:

• LEED (Leadership in Energy and Environmental Design) — What Works by David Bylund, Architects Hawaii

• Industry Concerns on Design Build panel discussion by Timothy Phillips, Honolulu District

• BIM (Building Information Model) in Detail by Deborah Solis, Honolulu District

• Design and Construction Lessons Learned by Erick Kozuma, HED

• HVAC Commissioning by Ed Yago, Honolulu District

• Corps Permits for Projects on Water by George Young, Honolulu District

• Future of Military Construction (MILCON) Transformation by Andrew Kohashi, Honolulu District

• Hawaii Environmental Compliance Assessment Training and Tracking by Russell Leong, Honolulu District

• Military Munitions Response Program by Chuck Streck, Honolulu District

Tad Ono of Parsons Brinckerhoff said the panel discussion about Industry Concerns on Design Build was the best breakout session he had participated in during the 13 years he'd attended the HED workshops.

"There was good give and take and a real discussion of the issues," Ono said. "This kind of frank discussion helps constructors and designers come to a better understanding of each other."

New York District supports Earth Day cleanup

The New York District's Army Corps' Operations Division Physical Support Branch operated the survey vessel *Hudson* work boat along with a Rigid Inflatable Boat (RIB) in support of the Urban Divers Estuary Conservancy's 9th Annual Gowanus Canal Earth Day Flotilla Spring Cleanup on April 20. The *Hudson*, back, hauls up an old small boat hull abandoned in the Gowanus Canal during the Earth Day cleanup event. The two-person crew of the RIB, center, dragged debris off the shore and out of the water, and then transferred the material to the *Hudson* for proper disposal. Canoe paddlers, part of the Urban Divers flotilla, armed with nets, gloves and trash bags are guided along an eco-cruise to assist in plucking floatable debris from the historic estuarine tributary that flows through Brooklyn. District crews collected several sunken metal shopping carts and many pieces of urban debris such as traffic cones and barrels. *(Photo by Tom Creamer)*

Value engineering

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Studies for EPA so far, with significant results and realized benefits.

"I believe the program has been a tremendous success by providing real value to projects, in terms of improved quality, enhanced construction methods, reduction in waste volume generated and financial savings," said Lindsey Lien, VE program manager at the EM CX. "Our VE team, led by a certified value specialist, is a dynamic and experienced group, engaged with the entire design team to ensure that VE results enhance the value of a project by increasing benefit and/or reducing unnecessary resource utilization."

Results from the VE studies are substantial. For the nine projects studied, the remedial action cost estimates total $217,600,000 with VE recommendations totaling $30,295,000, an average of 13.9 percent in reduced costs to the project. The average cost to conduct a VE Study is $52,000, representing a 65:1 benefit/cost ratio.

The VE initiative complements the other optimization methodologies developed in large part at the EM CX. These programs include: Technical Project Planning (TPP) which is used extensively to cost effectively plan data acquisition requirements over the life of a remedial action; and the EPA Remediation System Evaluation (RSE) process used for optimizing operational remediation systems.

"A good VE study does require some upfront planning and coordination," Lien said. "Typically, from project initiation to final report, a study will take approximately three to four months, with the bulk of the time allocated to upfront design review and coordination. Once the team assembles on site, the VE team meets for two to four days, with the final report being provided about four to six weeks later. In addition to supporting EPA, our team is now positioned to conduct VE studies for environmental projects executed under Formerly Used Defense Sites, the Defense Environmental Restoration Program and other programs as well."

Value engineering team at the Bountiful Woods Cross Superfund Site, Utah. *(Photo by Greg Mellema)*

If you have questions or would like additional information about the Value Engineering process, please contact Lindsey Lien, at 402-697-2580, or e-mail: lindsey.k.lien@usace.army.mil, or Greg Mellema, at 402-697-2658, e-mail: gregory.j.mellema@usace.army.mil.

Joliet ammunition plant get

By Todd Hornback
Louisville District

The Local 150 training area includes training on machinery and classrooms. *(Photos by Joliet Ammunition Plant Project Delivery Team)*

The U.S. Army Corps of Engineers, Louisville District, celebrated the completion of the environmental cleanup for the former Joliet Army Ammunition Plant, which included two of the largest and most complicated Superfund sites in the nation.

"The exceptional teamwork by all the stakeholders with regard to the cleanup has allowed the re-development at the Joliet Arsenal to become a national model that is envied by many communities and Local Reuse Authorities (LRA's) throughout the country," said Richard Kwasneski, executive director, Joliet Arsenal Development Authority, known as JADA.

Numerous areas of soil and groundwater were contaminated with explosives and chemical wastes at concentrations posing significant risk to human health and the environment. Complicating matters were unknown mixtures and quantities of unexploded ordnance and munitions debris that existed at or just beneath the ground surface at many locations.

The Abraham Lincoln National Cemetery is the second largest national cemetery in the country.

"We can all be proud of what was accomplished in this cleanup," said Richard Karl, director of U.S. Environmental Protection Agency Region 5's Superfund Division.

"Construction was completed three years ahead of schedule, and we achieved more than just cleaning up a site — we achieved sustainability. Both of those successes are due in large part to the outstanding cooperation we have all enjoyed. The project that has restored this land to productive use is truly a model for all Superfund cleanups done under Federal Facilities Agreements."

The Corps, through contractor support, restored 276,000 tons of soil through bioremediation and removed and disposed of more than 8,000 munitions and explosives-related items during investigations.

The Corps built a bioremediation facility under contract with Montgomery Watson Harza. At the time, the facility was the world's largest. It treated more than 30,000 tons of soil in its first year of operation and more than 276,000 tons before the cleanup was complete. The process used bacteria to feed on contaminants and took an average of 32 days to effectively treat the soil. The treated soil was beneficially reused as excavation backfill onsite.

Through the team's effort, the bioremediation facility optimized production and reduced projected costs by $25 million — a more than 20 percent savings. The total cost of the environmental remediation program was approximately $122 million.

In addition, contractors removed and disposed of approximately 44,000 tons of soil contaminated with PCBs and other related compounds and approximately

ts all cleaned up

73,000 tons of soil with metal contamination.

The transformation from Army ammunition plant to a multi-use facility literally took an act of Congress. The Illinois Land Conservation Act of 1995 — signed into Public Law 104-106 — launched the successful transfer leading to diverse land use for both public and private use. The act authorized land transfers from the Joliet Army Ammunition Plant to Will County, the state of Illinois, the U.S. Veterans Affairs and the U.S. Forest Service.

During bioremediation, machines turn the soil to promote bacterial growth for contaminants to be removed through a natural, environmentally friendly method.

According to Kwasneski, the assistance and priority given by the Army and the Restoration Advisory Board enabled JADA to secure developers and projects by providing a comfort level that the environmental concerns would be addressed in a timely fashion to allow development to move forward.

In 2000, JADA received the first transfer of land from the U.S. Army. The transition has grown to include the CenterPoint Intermodal Center and the BNSF Logistics Park. This logistics center serves as a central location for the gathering and distribution of goods in the midwestern U.S. The International Union of Operating Engineers — Local 150 purchased 300 acres and built a state-of-the-art training center to help workers improve current skills and learn new ones while providing much-needed economic development in the region. Additions include a 1,100-acre Island City Industrial Park and a 776-acre warehouse and distribution park.

The land transferred has been used for the Abraham Lincoln National Cemetery, the nation's second largest; the 19,000-acre Midewin National Tallgrass Prairie, the largest piece of protected open space in northeastern Illinois; and the 455-acre Prairie View Landfill.

Businesses are expected to generate more than 21,000 construction jobs, 8,000 permanent jobs and more than $27 million in annual property taxes. Approximately 1,750 acres remain for transfer by the year 2009.

"The U.S. Army Corps of Engineers is proud to be part of this project's environmental cleanup and success," said Col. Raymond Midkiff, Louisville District commander, U.S. Army Corps of Engineers. "The former facility continues to support the nation with industry and environmental restoration. The success serves as a role model for partnering for communities across the nation and world."

A waste management vehicle rolls past the Prairie View Landfill sign. Soils from the environmental remediation were placed in this landfill during the cleanup.

Facilities Reduction Program demolishes old bunkers, reduces carbon footprint for Katterbach community

By Jo Anita Miley
U.S. Army Engineering and Support Center, Huntsville

Seemingly striking a balance between building necessary facilities to support the mission and helping to maintain a pleasant and healthy environment would be impossible. However, the U.S. Army Engineering and Support Center, Huntsville's Facilities Reduction Program has proven it can be done.

The FRP team recently completed a large scale demolition project in Urlas, a small military community in Katterbach, Germany, and reduced its carbon footprint. The team tore down 18 old bunkers to build 138 housing units for American Soldiers and their Families, while meeting strict German requirements for reducing their carbon footprint.

In the past, the heavily guarded site was used as a military training site for Soldiers and the bunkers served as an ammunition storage area for the 1st Armored Division. Since the withdrawal of the division, the bunkers were used to store old furniture and equipment.

According to Norman Cotter, program manager, IMCOM-Europe Engineering Division, there is an increased focus on global warming and many governmental agencies are now examining ways to reduce their greenhouse gases as environmental issues gain traction.

"There is an increased focus on military construction and its effect on our environment on the international level," Cotter said. "Governments in other nations are examining each building effort more closely in an effort to protect what little space (land) is left to build on. They want to preserve their natural resources and protect plant and animal life whenever possible. We (Americans) don't want to do anything that will upset this balance either."

Cotter explained that in Germany there is a very unique situation in regard to new construction. Agencies are land-locked to spaces available.

Demolition began Feb. 11, and workers are now recycling concrete and asphalt, stone, steel, grass and soil from the bunkers and surrounding area. In adherence to strict German construction laws, the materials cannot simply be sent to a landfill. Cotter said recycling these materials is a very large effort. To date, they have accumulated more than 20 different piles of contaminated and uncontaminated material. The uncontaminated materials are handled differently and will be used for recycling purposes.

"The large stone chunks must be crushed into smaller stone that will be reused for the foundation of road construction, and concrete is crushed into even smaller particles that will be completely recycled. Each bunker houses massive steel walls that will be recycled and sold on the open market," Cotter said. "Amazingly, they (German government) have even found a use for the abounding grassy soil that encompasses the bunkers — it will be stored and remixed to spread out over the entire site as topsoil prior to new construction."

German contractors use heavy equipment to demolish concrete portion of an old bunker at Urlas. The concrete will be crushed into smaller particles that will be completely recycled at Urlas. *(Photo by Norman Cotter)*

Thad Stripling, program manager for the Facilities Reduction Program, oversees funds for the Urlas project. Stripling stresses the impact of the savings for the customer and the Center.

"Following the strict environmental guidelines set forth by the host country will play an important role in the successful completion of our mission. The Germans are giving us discounts and incentives to protect their environment, and these savings allow the Army to provide high-quality facilities for the American troops and their Families," Stripling said.

Stripling said there is significant focus on recycling and reusing materials in Europe. "Recycling and reusing materials allows us to reduce our project costs. Reducing our project costs allow the program funds to go further, and we get more done with less," he said.

Demolition at Urlas ended in May and construction of the first 138 townhouse units for American Soldiers and their Families will begin late this summer. An exchange, commissary, lodge and school are to follow.

Three agencies sign Maine In-Lieu Fee Agreement

By Timothy Dugan
New England District

Maine's Department of Environmental Protection, The Nature Conservancy and the U.S. Army Corps of Engineers, New England District, signed the Maine In-Lieu Fee Agreement on Jan. 31, in The Nature Conservancy Office in Brunswick, Maine.

The agreement will use Maine's Natural Resource Mitigation Fund to provide an alternative to site-specific compensation for people seeking permits that impact wetlands or U.S. waters. Previously, site-specific mitigation for many of these projects has had limited ecological value due to their size, location and/or permittee's ability to provide appropriate stewardship.

This agreement will provide permit applicants an efficient and workable alternative of paying a fee to compensate for any lost wetlands functions and values after all efforts have been made to avoid or minimize those impacts. The fees will be used to restore, create, enhance aquatic resources and/or preserve aquatic resources and their associated uplands.

The In Lieu Fee (ILF) program is available for use as compensation for unavoidable impacts to waters of the U.S., including wetlands, resulting from activities authorized under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act and/or the Natural Resources Protection Act in the state of Maine. Recipients of permits or authorizations for projects in Maine may be eligible to use the program to satisfy mitigation requirements. ILF is an option available to the applicant instead of completing project-specific mitigation. Use of the ILF program is contingent upon the Corps' and/or state approval.

The fee in lieu of project-specific mitigation will be determined by the Corps in consultation with resource agencies.

More information is available on the Corps' Web site at http://www.nae.usace.army.mil. Select Regulatory/ Permitting and then Mitigation and select "Maine In-Lieu Fee Agreement."

Corps' habitat nesting effort fosters wood ducks

By Grover Pegg
Pittsburgh District

MAHONING CREEK LAKE, Pa. — Wood duck fledglings have soared to their highest numbers here after nearly disappearing from the lake, thanks to a robust nesting program started by the U.S. Army Corps of Engineers and supported by local volunteers.

Because of loss of habitat and over-hunting in the early 1900s, the wood duck was nearly driven to extinction. But with good conservation management and thousands of nesting boxes built by concerned citizens nationwide, the wood duck population made a remarkable recovery.

The 2007 nesting season survey revealed that 89 young wood ducks fledged from Mahoning Creek Lake nesting structures, the highest success rate for the young waterfowl since the wood duck box program began at Mahoning in 1991. By comparison, the 2003 nesting season produced 87 wood duck fledglings.

Adult male wood ducks can be seen along the Big and Little Mahoning creeks in Armstrong County, Pa. *(Stock photo)*

Wood ducks are unique because they are cavity nesters, which mean they nest in old woodpecker holes or other natural cavities created by dead or dying trees along the shoreline. Mahoning Lake has taken the initiative to enhance "woody" populations by constructing 26 artificial wood duck nesting boxes throughout the project.

Most of the wood duck boxes at Mahoning are the circular metal-type, 30 inches high with a cone point top. Wood ducks prefer to nest over water so that their ducklings have a soft place to land when they leave the nest. Ducklings can fall 50 feet without being injured.

Wood ducks inhabit forested wetlands and pool-laden areas; the Corps' Mahoning Creek Lake provides a perfect habitat for them. Their habitat is wooded swamps and bottom land forests in the eastern and western portions of the U.S. and Canada, and western Mexico.

Considered the most colorful ducks in North America, the drake, or male, wood duck is unmistakable with its complex face and bold body patterns of iridescent maroon, green, purple and white. Wood ducks, sometimes referred to as squealers, range in size from 17 to 20 inches in length. They are an average-sized duck that feed on beetles and other insects, and especially like fruits, nuts and other vegetation.

For more information on the wood duck nesting program or activities at Mahoning Creek Lake, stop by the park office or call 814-257-8811.

3-year, $50 million project to refresh, update Portland District dredges

Essayons, Yaquina being repowered for relevance in modern dredging world

By Jennifer Sowell
Portland District

A 30-ton behemoth creeps slowly down through the dark reaches of the hopper on the dredge *Essayons*. It peeks through a gaping hole in the steel wall of the hopper bulkhead as a dozen crew members join together in the struggle. No, they are not doing battle with a sea monster, they are working to carefully and precisely place a brand new engine on board as part of the massive repowering of the dredge.

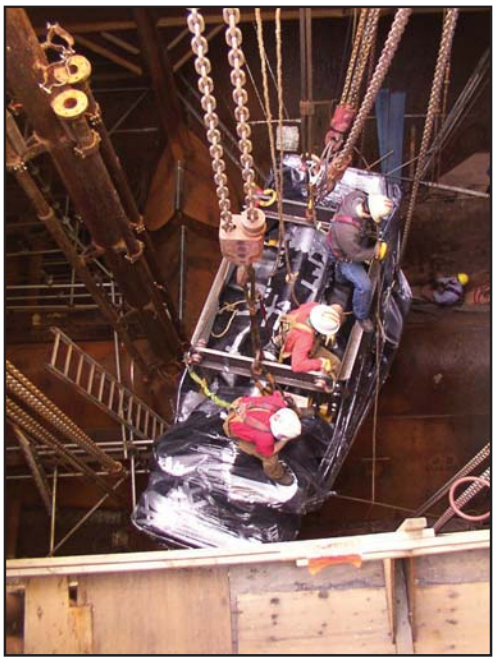
The Portland District dredges *Essayons* and *Yaquina* work annually from March to November to maintain navigation channels in the Northwest and West Coast ports from Grays Harbor, Wash., to San Diego. They are also at the ready to quickly mobilize anywhere to assist in emergencies.

Being such far-reaching local assets, it's important that the dredges are kept in good condition, relevant with industry, environmentally compliant and at the peak of efficiency. The dredges were built in the early 1980s, and now, well into their mid-life, they are in need of some proactive refreshing to ensure they continue to serve the Corps for many more years.

To accomplish this, both dredges are slated for extensive repowering over the next three fiscal years at a combined cost of more than $50 million. The work focuses on updating the dredge's propulsion systems and improving power generation. The work is spread over several fiscal years to minimize impacts to the dredges' normal schedules.

The dredge, *Essayons*, in drydock at Cascade General Shipyard in Portland, Ore. Crews cut several access holes in the vessel's hull to remove the old equipment and install the new.

That said, the bulk of the work is focused on the *Essayons* this year. The dredge has been in dry dock since Dec. 1 for the most intensive portion of its repowering, which will keep it out of commission through early July, eating into the dredging season. A regional hopper contract has been advertised for industry dredges to take care of the work the *Essayons* would normally do this year.



One of the four new, 30-ton main engines is directed down into the hoppers and through the access hole into the engine room. The new tier 2 engines will greatly reduce the dredge's emissions. *(USACE photos)*

During the annual off-season, the dredges typically have an eight-week period when they go through routine maintenance. The current phase of the repowering on the *Essayons* requires more than triple that amount of time due to the magnitude and complexity of the work.

Mac Robison, chief of the Plant Maintenance Section at the U.S. Moorings, described this phase of the repowering as, "a collection of completely interrelated actions that all depend upon one another for the whole thing to work.

"The irreducible complexity of the job requires the time necessary to get it all done, so we had to go beyond our normal November to March repair availability," he said.

Planning for the dredges' repowering began in the late 90s, as the dredges were entering mid-life and newer technology was upping the ante in the industry. Robison

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started consulting with the dredge crews on what needed to be replaced and with the Marine Design Center (MDC) on options for making that a reality.

The MDC is the Corps of Engineers' center of expertise and experience for naval architecture and marine engineering. It managed the contract when the *Essayons* was originally built, and is now handling the repowering of both dredges.

While MDC is overseeing the contract and handling any design issues and quality assurance onsite, the equipment removals and installations are being handled by a crew with Cascade General Shipyard. The crew at Cascade General also has held the annual maintenance contract for the *Essayons* for the last 10 years, making them intimately familiar with the vessel.

"We are taking care of the routine maintenance concurrently with the comprehensive repower," said Adam Beck, Cascade General project manager.

"The propulsion and power management systems are extremely technically complex," Beck said. "It's a big job, and it's been a challenge."

Beck oversees a crew of 140 Cascade General employees to achieve the monumental task.

"A large amount of the work, about 85 percent, is in the engine and generator rooms," Beck said.

"We're adding several megawatts of power generation capability and several thousand horsepower. It's a significant change."

When the work is complete, the *Essayons* will be capable of generating 10 megawatts of power and will increase its propulsion by 2,000 horsepower.

All that added power is actually more environmentally friendly than the equipment it is replacing. This is especially important because, in California, where both dredges maintain several coastal ports, emission standards are more restrictive and heading further down that path.

The eight new, tier 2 engines recently installed on the *Essayons* will greatly reduce NOx (nitrogen oxides) and allow for the use of low sulfur oxide diesel fuel, resulting in a reduction of SOx (sulfur oxides). New electronic governors will reduce the amount of visible particulate matter released into the atmosphere while making more efficient use of fuel.

"They raised restrictions on what you can put out the stack, so it's a good thing we're doing this now," Robison said.

The *Yaquina* will get seven tier 2 engines in 2010, when the repowering focuses on the smaller dredge. Until then it will need a waiver to work in California waters.

In addition to staying ahead of the environmental curve, the repowering also will translate into increased efficiency and cost savings. In the next two years, the *Essayons* will be outfitted with excavator dragheads, hopper distribution system improvements and a bulbous bow.

"The total package will have lower emissions and more efficient hopper loading," Robison said.

The new, more efficient excavator draghead setup combined with a new hopper distribution system designed to speed up the settling rate of sediment in the hopper are expected to yield an increase of 10 to 15 percent more than the seven million cubic yards the *Essayons* usually dredges during a typical season.

In addition, the bulbous bow design reduces the friction of the hull on the water, allowing the dredge to slide through the water with better speed and fuel efficiency.

These improvements, combined with the increased horsepower and fuel savings of the new engines, will allow for faster mobilization of the dredge at less expense and for the capability to dredge more material in less time. These are welcome benefits in the face of narrowing in-water work windows imposed by state and federal environmental agencies.

Workers remove the old Internal Control and Monitoring System from the engineers' control room. The cabinets were stripped of all wiring and controls making way for the new and improved monitoring system.

"All our customers love the *Essayons* because it produces so much so fast," Robison said. "The improvements from the repowering will make it a 'go-to' dredge on the West Coast."

Undertaking the repowering of two dredges over several years is a daunting task, full of logistical hurdles and requiring a great deal of time, effort and expense, but the payoff is worth it.

"These modernizations will improve dredging efficiency and minimize the dredges' adverse environmental footprints," Robison said. "Not to mention doubling their lives."

Milltown one of EPA's largest Superfund cleanups

By Dick Devlin
Seattle District

Just seven miles east of Missoula, Mont. is a hamlet known as Milltown. Designated a U.S. Environmental Protection Agency "Superfund" site in 1981, actual construction on the site began some five years ago. Today it has become one of the largest EPA-directed cleanups in the country.

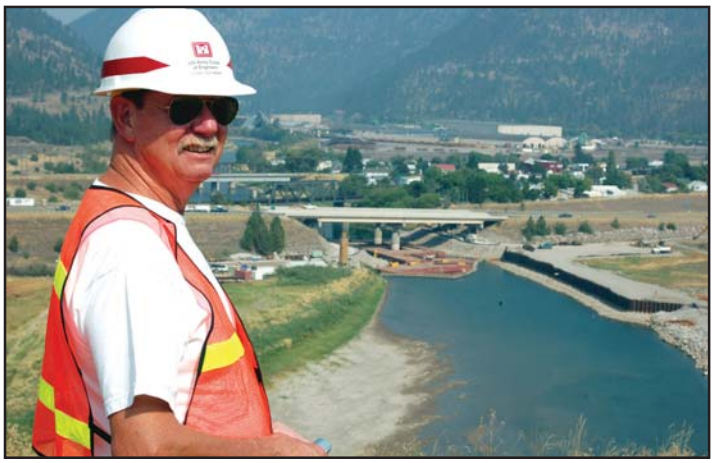
As part of the $100 million Superfund project to remove both contaminated sediments and the Milltown Dam, the U.S. Army Corps of Engineers, which is mandated by law as the supporting engineering and construction agency, has rehabilitated a pair of parallel bridges that carry traffic along Interstate 90 across the Blackfoot River. Because the project is on a major east-west Interstate, it is both highly visible and critical to the Northwest's economy.

The EPA's cleanup plan covers more than 100 river miles upstream of Milltown Dam and will deal with cadmium, arsenic, lead, copper and zinc, removing 85 percent of contaminated sediments. With the dam's dismantling comes the need to dispose of 2.2 million cubic yards of toxic waste mud accreted from more than a century of mining and smelting in Butte and Anaconda, 120 miles up the Clark Fork. Nearly all of it arrived behind the dam with the great flood of 1908. About one third of the total will be excavated and hauled by rail 100 miles up to the Opportunity Repository near the old smelter at Anaconda.

According to Project Manager Lynn Daniels of Seattle District's Missoula Business Office, the Corps is overseeing the responsible party's cleanup of toxic sediments which migrated down the Clark Fork River over the years from the huge copper mining operations and collected behind the dam.

To allow the sediments to be excavated, sorted and shipped by rail to their points of origin, a dedicated rail spur was built and Montana Rail Link now moves 45 rail cars of sediment a day to Opportunity. Finally construction of a bypass channel to reroute the Clark Fork during the remediation was finished and filling was completed in mid-March. The new channel's walls are riprap, Reno Matting and TRM geo-textile fabric. The Corps completed the critical slope stabilization work around the two Interstate bridges, abutment underpinning and center pier foundation work in February 2008.

Ultimately the cleanup will remove 167 acres of polluted soils along the river, treat 700 acres of soil in place, establish a 50-foot riparian area on each side, replant native willows, dogwood and cottonwood to stabilize 56 miles of stream bank against further erosion and prevent additional heavy toxic metals from entering the river. The entire cleanup will likely take at least two more years.



Terry Hoffman, the project's Quality Assurance inspector, describes the view from 'The Overlook' directly above Milltown Dam. Clearly visible are the Blackfoot River, the I-90 bridges and the sheet pile wall and bypass channel under construction. *(Photo by Dick Devlin)*

In October 2005, work was started on removal of Stimson Lumber Co.'s dam, built in 1886 as a way to stop floating log drives down the Blackfoot River at Bonner. The 30-foot tall, 210-foot long rock-filled timber crib dam had been mostly immersed since the Milltown Dam was built, but as the reservoir was drawn down in preparation for the dam's removal, the Stimson Dam rose from the past. The entire dam was removed by the end of November 2005. Had it been left in place, it would have become unstable following the removal of Milltown Dam and the resumption of a free-flowing Blackfoot River.

With so many different governmental agencies and contractors involved in making the project come together one might expect job site conflicts and disagreements but not so according to quality assurance inspector for the Corps, and rehired annuitant, Terry Hoffmann. He acknowledges that there are "a lot of moving pieces on this job but everybody working on it goes the extra mile to accommodate each others need's to ensure things keep moving along on schedule."

Exactly a century after the Milltown Dam produced its first electricity, demolition teams were positioning excavators to begin removing the first pieces of its north abutment wall. On March 18, the bypass channel was flooded by breaching the downstream barrier, allowing the Blackfoot River to fill the channel slowly, avoiding too quick a drop in the river level downstream. Three days later the Clark Fork River bypass was routed through where the powerhouse had stood. It will flow in the bypass channel until remaining sediment is removed.

Awards

Chamberland receives George E. Stone Award for work with trees

By Ann Marie R. Harvie
New England District

One of the Massachusetts' historic local environmental organizations has recognized a New England District park ranger for his expertise as an arborist.

Thomas Chamberland, a park ranger from Westville Lake, received the George E. Stone Award from the Massachusetts Tree Wardens and Foresters Association (MTWFA), during the organization's 95th annual conference in Sturbridge, Jan. 9. The Stone Award, named after the MTWFA founder, was first created to honor the outstanding dedication of a MTWFA member who has continually demonstrated strong commitment with many hours of volunteer service to the organization.

In addition to his work at Westville Lake, Chamberland, who is a certified arborist through the International Society of Arboriculture, has served as tree warden for Sturbridge, Mass., since 1984.

"Tree wardens are responsible for the planting, care, maintenance and removal of public shade trees — trees on public property such as streets and commons," Chamberland said.

The fact that Sturbridge has been designated "Tree City USA" by the National Arbor Day Foundation in cooperation with the USDA Forest Service and the National Association of State Foresters for 18 consecutive years is a tribute to his dedication to his post. Chamberland is also a longtime volunteer for the local Boy Scout organization and serves on the Council Committee which oversees the management of a 1,600-acre Boy Scout camp.

The Westville Lake park ranger's love for trees and the great outdoors came at a very young age.

"My first interest in trees was sparked by a fifth grade tree walk in the forest out in the backyard of my school," he said. "I've always liked working outdoors and had a high school job working on grounds and landscaping for the local church and cemetery."

Chamberland's talents have not only benefited his town and the New England District, but also the people of New Orleans. Last summer Chamberland deployed to the New Orleans Recovery Field Office for 60 days as their only staff arborist. During his tour, he surveyed damaged trees and determined which ones could be saved and which ones had to be cut down. Chamberland received a letter of appreciation and a commander's coin for his efforts during that tour.

The George E. Stone Award is given through a nomination process. The criteria for the award are very strict with contenders having a minimum of 10 years of service in the public tree sector, having to be recognized for their contributions in public tree care or advocacy, and having worked with the MTWFA and shown dedication and commitment to the advancement of the association.

Chamberland, who is the 18th recipient of the award, was taken completely off guard when he was notified of the honor and does not know who nominated him.

"I was overwhelmed," said Chamberland about receiving the award. "As an 11-year active member of the executive board of the MTWFA, I know this presentation is not made lightly."

(Courtesy photos)

Thomas Chamberland examines a tree in New Orleans. (Inset) Chamberland is this year's George A. Stone Award recipient.

10 things to reduce our environmental footprint

1) **It's a turn-off.** Turn off all lights and electrical equipment before leaving your office, even if it's just for a couple of hours. Be a good neighbor and turn off any lights, etc., that neighbors may have left on after they have gone for the day. And neighbors, don't turn against your fellow cubist for being thoughtful enough to punch out your lights.

2) **Recycle.** All #1 and #2 plastics, glass and aluminum cans should be deposited in the proper lunch room receptacles, where available. Recycle cardboard, newspaper and paper in the blue recycling bins.

3) **Be a pack rat.** Save used supplies, like file folders, notebooks and paperclips for reuse, and return them to the Division or Regional Supply Room. Also, request used office supplies from the Supply Room (and don't forget to ask about our extended warranty on clean, low mileage, pre-owned supplies ...).

4) **Practice safe "take-out."** Just say "No" to extra condiments, paper and plastic bags, and napkins. Create a community condiment basket in the lunch room on your floor instead of throwing them away.

5) **Lug your mug.** Brandish a reusable mug in the office (many coffee shops will refill your mug at a discount!). And don't forget to show your mug at outside meetings.

6) **Can you hear me now?** Before scheduling travel, ask yourself if a conference call can accomplish the same or nearly the same thing (especially if the meeting is scheduled at a really boring location).

7) **Take the A Train.** If you must travel, look at public transit options in choosing the location of the meeting and pick the option where the most travelers go the shortest distance.

8) **Hyping the hybrids.** If you must drive a car for your travel, take the most efficient vehicle available and appropriate for the task. Consider one of the new hybrids and car pool if you can. Also remember don't top off your tank. This will not only save money, but help reduce many tons of VOC emissions each year!

9) **Pass on the handouts.** Eliminate excess handouts at meetings by e-mailing copies of presentations and documents, or have them posted on the Internet, Intranet, a share drive or burned onto a CD. If you must have handouts at least double-side copy them.

10) **Printing panache.** Before you print something or make a copy, ask yourself if you really need it. If you do print it, don't forget to pick it up — so you can avoid printing it twice! **Print double-sided** whenever possible and print only those pages you need, not an entire document. And for goodness sake, lose the banner pages! If you don't know how, call the computer hotline.

These are 10 simple and easy things you can do, that in most instances, will not only save resources and prevent pollution but usually will save money too. If we all use them, they add up to great environmental benefits.

For more tips, visit the Web at: http://www.epa.gov/Region3/ems/facility/top-ten-things.pdf.

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